

#### Avaya Solution & Interoperability Test Lab

Application Notes for Configuring ATT-AudioText Telecom AG Alarm Management Server with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3 – Issue 1.0

#### **Abstract**

These Application Notes describe the configuration steps for provisioning ATT-AudioText Telecom AG Alarm Management Server to interoperate with Avaya Aura® Communication Manager and Avaya Aura® Session Manager.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

#### 1. Introduction

These Application Notes describe the configuration steps required for ATT-AudioText Telecom AG Alarm Management Server to successfully interoperate with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3. The ATT-AudioText Telecom AG Alarm Management Server (ATT AMX) generates preconfigured or ad hoc alarms which were signaled to Communication Manager as calls via a SIP Trunk between the ATT-AudioText Telecom AG Alarm Management Server and Avaya Aura® Session Manager.

# 2. General Test Approach and Test Results

The interoperability compliance testing evaluates the ability of The ATT AMX server to send an Alarm notification both aurally and visually to various Avaya endpoints. For the conformance tests described by these Application Notes, ATT AMX Alarm Management Server and Communication Manager were configured to operate a follows:

- Each alarm consisted of an audio message and a text message. The text message was sent
  as the calling party name (which can have a maximum length of fifteen characters) and was
  thus visible for alarms to local extensions and DECT endpoints (but not PSTN endpoints).
- Alarms were also configured such that the alarm recipient must acknowledge via keypad input, thus preventing alarms which were answered by voicemail systems from being considered as delivered.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

## 2.1. Interoperability Compliance Testing

The compliance testing included the test scenarios shown below. Note that when applicable, all tests were performed with Avaya SIP deskphones, Avaya H.323 deskphones, Avaya DECT handsets and PSTN endpoints.

- Alarm creation via text-to-speech and via telephone input
- Alarm delivery to idle station
- Alarm to busy station
- Alarm to station, no answer
- Alarm to station with coverage enabled, no answer
- Alarm to station with call forwarding enabled
- Alarm to unavailable station
- Alarm to tandem station
- Alarm to hunt group
- Alarm to multiple endpoints
- Automatic startup after power interruption
- Recovery from interruption to interface to PBX

#### 2.2. Test Results

The following observations were noted during testing.

- If a local fixed extension which has no available call appearance receives an incoming alarm call, the caller receives a "busy" indication: it makes no difference if it is a "priority" call.
- If an alarm call is made to a diverted (call forwarding) station, the call is diverted: it makes no difference if it is a "priority" call.
- Alarm calls to fixed stations which are paired with DECT stations via EC500, result in calls to DECT stations which do not include alarm text messages.
- If the ATT AMX Alarm Management Server is disconnected from its LAN interface, no alarms will be generated. The unit continues normal operation when the LAN interface is reconnected.

# 2.3. Support

Support from Avaya is available by visiting the website <a href="http://support.avaya.com">http://support.avaya.com</a> and a list of product documentation can be found in **Section 10** of these Application Notes. Product information and support for ATT AG products may be found at:

• Website: www.attag.ch/en/contact-us

• Help desk: +41 (0)44 908 60 04

# 3. Reference Configuration

**Figure 1** shows the network topology during compliance testing. The ATT AMX server is connected to the telephony LAN and registers with Session Manager in order to be able to send alarms to the Avaya H.323 and SIP deskphones on Communication Manager.

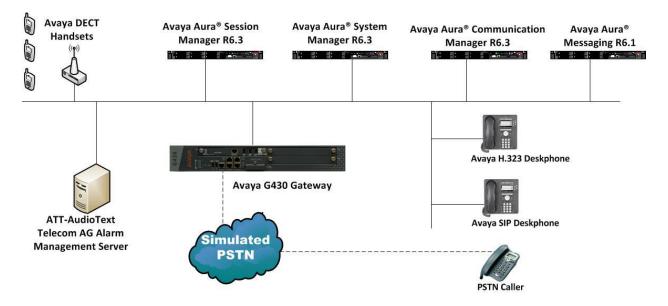


Figure 1: Network Solution of ATT-AudioText Telecom AG Alarm Management Server with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3

# 4. Equipment and Software Validated

The following equipment and software was used for the compliance test.

Equipment/Software	Version/Release		
Avaya Aura® System Manager running on an Avaya S8800 Server	R6.3 SP3 Build 6.3.0.8.5682-6.3.8.1814 Software Update Revision 6.3.3.5.1719		
Avaya Aura® Communication Manager running on an Avaya S8800 Server	R6.3 SP1 R016x.03.0.124.0		
Avaya Aura® Session Manager running on an Avaya S8800 Server	R6.3 SP3 6.3.3.0.633004		
Avaya 9608 H.323 Deskphone Avaya 9620 H.323 Deskphone Avaya 9630 SIP Deskphone	96xx H.323 Release 6.2009 96xx H.323 Release 3.103 (SP2) 96xx SIP Release 2.6.8.4 (SP3)		
Avaya 9621 H.323 Deskphone Avaya 9641 H.323 Deskphone Avaya 9641 SIP Deskphone	96x1 H.323 Release 6.2.119 96x1 H.323 Release 6.2209 96x1 SIP Release 6.2.1.26		
Avaya one-X® Communicator	R6.1		
Avaya DECT Handsets	3725 DH4 (R3.3.11) 3720 DH3 (R3.3.11)		
ATT-AudioText Telecom AG Alarm Management Server	V11.4.8.52		

# 5. Configure Avaya Aura® Communication Manager

It is assumed that a fully functioning Communication Manager is in place with the necessary licensing with a SIP Trunk in place to Session Manager. For further information on the configuration of Communication Manager please see **Section 10** of these Application Notes. The following sections go through the following.

- Dial Plan Analysis
- IP Interfaces
- Network Region
- IP Codec
- SIP Trunk

## 5.1. Configure Dial Plan Analysis

Use the **change dialplan analysis** command to configure the dial plan using the parameters shown below. Extension numbers (**ext**) are those beginning with **2**, **3**, **4** and **5**. Feature Access Codes (**fac**) use digits **8** and **9** or #.

change dialplan analysis	DIAL PLAN ANALYSIS TABLE	Page 1 of 12 Percent Full: 1
Dialed Total Call String Length Type  2 4 ext 3 4 ext 4 ext 5 4 ext 8 1 fac 9 1 fac * 3 dac # 3 fac	Dialed Total Call String Length Type	Dialed Total Call String Length Type

# 5.2. Configure IP Interfaces

Shown below is an example of the nodes names used in the compliance testing. Note that ATT AMX does not feature in this setup and only the name and IP address of Session Manager is added. Use the **change node-names ip** command to configure the IP address of Session Manager. **SM100** is the **Name** used for Session Manager and **10.10.40.34** is the **IP** Address.

change node-na	mes ip		Page	1 of	2
	I	P NODE NAMES			
Name	IP Address				
SM100	10.10.40.34				
default	0.0.0.0				
G430	10.10.40.18				
procr	10.10.40.13				
procr6	::				

## 5.3. Configure Network Region

Use the **change ip-network-region x** (where x is the network region to be configured) command to assign an appropriate domain name to be used by Communication Manager, in the example below **devconnect.local** is used. Note this domain is also configured in **Section 6.1** of these Application Notes.

```
change ip-network-region 1
                                                               Page 1 of 20
                              TP NETWORK REGION
 Region: 1
Location: 1
                Authoritative Domain: devconnect.local
   Name: default NR
     PARAMETERS
Codec Set: 1
MEDIA PARAMETERS
                               Intra-region IP-IP Direct Audio: yes
                               Inter-region IP-IP Direct Audio: yes
   UDP Port Min: 2048
                                          IP Audio Hairpinning? y
  UDP Port Max: 3329
DIFFSERV/TOS PARAMETERS
 Call Control PHB Value: 46
       Audio PHB Value: 46
       Video PHB Value: 26
802.1P/Q PARAMETERS
Call Control 802.1p Priority: 6
       Audio 802.1p Priority: 6
       Video 802.1p Priority: 5
                                   AUDIO RESOURCE RESERVATION PARAMETERS
H.323 IP ENDPOINTS
                                                       RSVP Enabled? n
 H.323 Link Bounce Recovery? y
 Idle Traffic Interval (sec): 20
   Keep-Alive Interval (sec): 5
            Keep-Alive Count: 5
```

## 5.4. Configure IP-Codec-Set

Use the **change ip-codec-set x** (where x is the ip-codec set used) command to designate a codec set compatible with the ATT AMX which supports both **G.711A** and **G.729A**.

```
change change ip-codec-set 1
                                                                       1 of
                                                                 Page
                       IP Codec Set
   Codec Set: 1
              Silence Frames
   Audio
                                   Packet
   Codec
              Suppression Per Pkt Size(ms)
1: G.711A
                            2
                                     20
                   n
2: G.729A
                   n
                             2
                                     20
```

## 5.5. Configure SIP Trunk

Prior to configuring a SIP trunk group for communication with Session Manager, a SIP signaling group must be configured. Configure the Signaling Group form shown below as follows:

- Set the **Group Type** field to **sip**
- Set the **Transport Method** to the desired transport method; **tcp** (transport control protocol) or **tls** (Transport Layer Security)
- The **Peer Detection Enabled** field should be set to **y** allowing the Communication Manager to automatically detect if the peer server is a Session Manager
- Specify the node names for procr and the Session Manager node name as the two ends of the signaling group in the **Near-end Node Name** field and the **Far-end Node Name** field, respectively. These values are taken from the **IP Node Names** form shown above
- Set the Near-end Node Name to procr. This value is taken from the IP Node Names form shown above
- Set the **Far-end Node Name** to the node name defined for the Session Manager (node name **SM100**), also shown above
- Ensure that the recommended TLS port value of **5061** is configured in the **Near-end Listen Port** and the **Far-end Listen Port** fields
- In the **Far-end Network Region** field, enter the IP Network Region configured above. This field logically establishes the **far-end** for calls using this signaling group as network region 1
- Leave the Far-end Domain field blank to allow Communication Manager to accept any domain
- The **DTMF over IP** field should remain set to the default value of **rtp-payload**. This value enables Communication Manager to send DTMF transmissions using RFC 2833
- The **Direct IP-IP Audio Connections** field is set to **y**
- The default values for the other fields may be used

```
Page 1 of
change signaling-group 1
                               SIGNALING GROUP
Group Number: 1
  IMS Enabled? n
                             Group Type: sip
                       Transport Method: tls
       Q-SIP? n
    IP Video? n
                                                   Enforce SIPS URI for SRTP? y
 Peer Detection Enabled? y Peer Server: SM
  Near-end Node Name: procr
                                            Far-end Node Name: SM100
Near-end Listen Port: 5061
                                          Far-end Listen Port: 5061
                                       Far-end Network Region: 1
Far-end Domain:
                                            Bypass If IP Threshold Exceeded? n
Incoming Dialog Loopbacks: eliminate
                                            RFC 3389 Comfort Noise? n
DTMF over IP: rtp-payload
Session Establishment Timer(min): 3
                                             Direct IP-IP Audio Connections? y
                                                      IP Audio Hairpinning? n
        Enable Layer 3 Test? y
                                                 Initial IP-IP Direct Media? n
H.323 Station Outgoing Direct Media? n Alternate Route Timer(sec): 6
```

Configure the **Trunk Group** form as shown below. This trunk group is used for alarm calls from the ATT AMX Server. Enter a descriptive name in the **Group Name** field. Set the **Group Type** field to **sip**. Enter a **TAC** code compatible with the Communication Manager dial plan. Set the **Service Type** field to **tie**. Specify the signaling group associated with this trunk group in the **Signaling Group** field, and specify the **Number of Members** supported by this SIP trunk group. Accept the default values for the remaining fields.

```
Change trunk-group 1

TRUNK GROUP

Group Number: 1

Group Type: sip

CDR Reports: y

COR: 1

TN: 1

TAC: *11

Direction: two-way

Dial Access? n

Queue Length: 0

Service Type: tie

Auth Code? n

Member Assignment Method: auto

Signaling Group: 1

Number of Members: 10
```

On Page 2 of the trunk-group form the Preferred Minimum Session Refresh Interval (sec) field should be set to a value mutually agreed with the ATT AMX Server to prevent unnecessary SIP messages during call setup. For the compliance test a value of **600** was used.

```
change trunk-group 1
Group Type: sip

TRUNK PARAMETERS

Unicode Name: auto

Redirect On OPTIM Failure: 5000

SCCAN? n
Digital Loss Group: 18
Preferred Minimum Session Refresh Interval(sec): 600

Disconnect Supervision - In? y Out? y

XOIP Treatment: auto Delay Call Setup When Accessed Via IGAR? N
```

#### Settings on **Page 3** can be left as default.

```
Change trunk-group 1
TRUNK FEATURES
ACA Assignment? n

Measured: none

Maintenance Tests? y

Numbering Format: private

UUI Treatment: service-provider

Replace Restricted Numbers? n
Replace Unavailable Numbers? n

Modify Tandem Calling Number: no

Show ANSWERED BY on Display? y
```

#### Settings on **Page 4** are as follows.

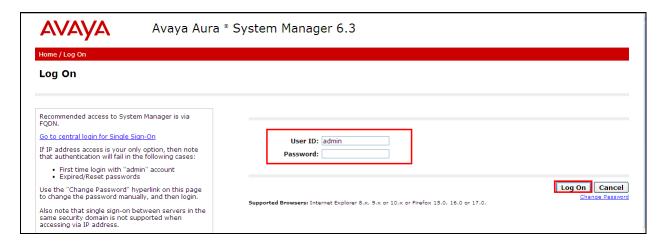
```
change trunk-group 1
                                                                           4 of 21
                                                                   Page
                               PROTOCOL VARIATIONS
                                         Mark Users as Phone? n
Prepend '+' to Calling/Alerting/Diverting/Connected Number? n
                        Send Transferring Party Information? y
Network Call Redirection? n
                                       Send Diversion Header? n
                                     Support Request History? y
                               Telephone Event Payload Type: 101
                         Convert 180 to 183 for Early Media? n
                  Always Use re-INVITE for Display Updates? n
                         Identity for Calling Party Display: P-Asserted-Identity
            Block Sending Calling Party Location in INVITE? n
                 Accept Redirect to Blank User Destination? y
                                                Enable Q-SIP? n
```

# 6. Configure Avaya Aura® Session Manager

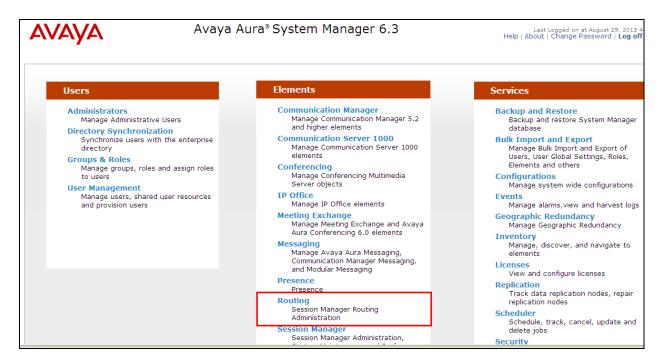
A SIP trunk is setup between the ATT AMX server and Session Manager. In order to make changes in Session Manager a web session to System Manager is opened.

## 6.1. Configuration of a Domain

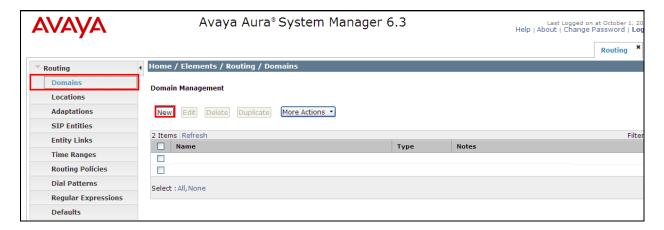
Navigate to http://<System Manager IP Address>/SMGR, enter the appropriate credentials and click on **Log On** as shown below.



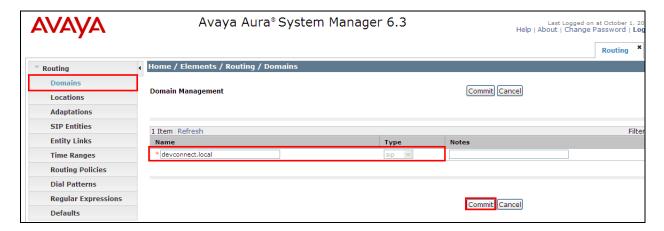
Once logged in click on **Routing** highlighted below.



Click on **Domains** in the left window. If there is not a domain already configured, click on **New** highlighted below.

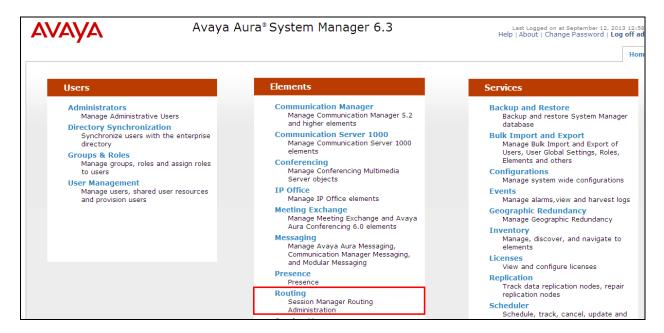


Note the domain **Name** used in the compliance testing was **devconnect.local**. Note this domain is also referenced in **Section 5.3**. Once the domain name is entered click on **Commit** to save this.



## 6.2. Configuration of SIP Entities

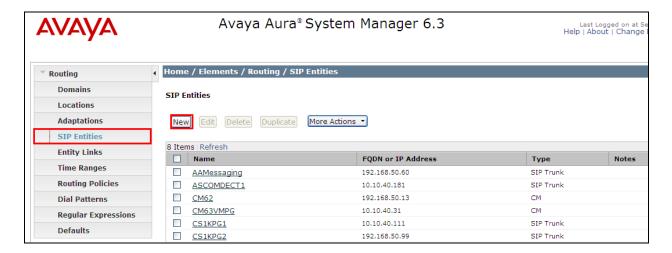
Navigate to http://<System Manager IP Address>/SMGR, enter the appropriate credentials and click on **Log On** as shown in **Section 6.1**. Once logged in, click on **Routing** highlighted below.



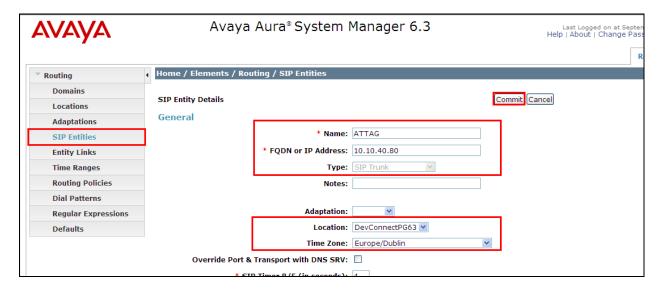
Clicking on **SIP Entities** shows what SIP Entities have been added to the system and allows the addition of any new SIP Entity that may be required. Please note the SIP Entities already present for the Compliance Testing of ATTAG AMX Server.

- Communication Manager SIP Entity
- Session Manager SIP Entity

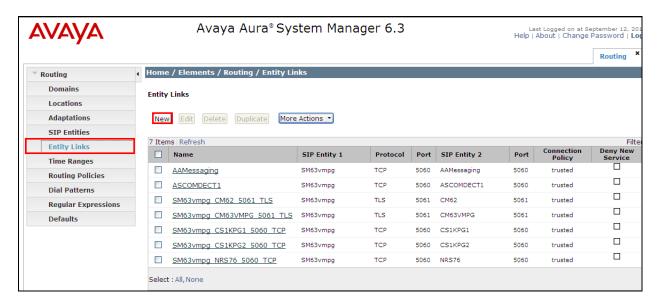
A SIP Entity and Entity link are required in order for the Alarm server to send the alarm message to Communication Manager Stations. Select **SIP Entities** in the left window and click on **New** in the main window.



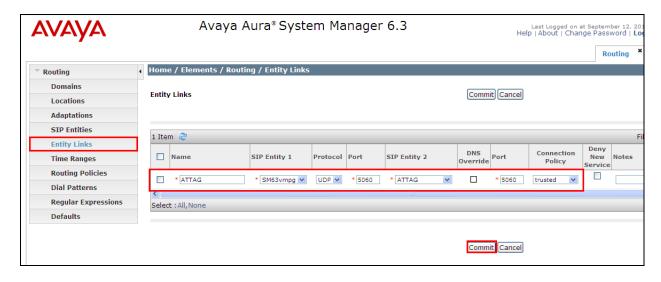
Enter a suitable **Name** and enter the **IP Address** of the ATT AMX Server. Select the correct **Location** and **Time Zone**. Click on **Commit** once completed.



Select **Entity Links** from the left window and select **New** from the right window in order to add the new ATT AMX Entity Link.



Ensure that **UDP** is selected for the **Protocol** and **5060** for the **Port**. Click on **Commit** once completed.

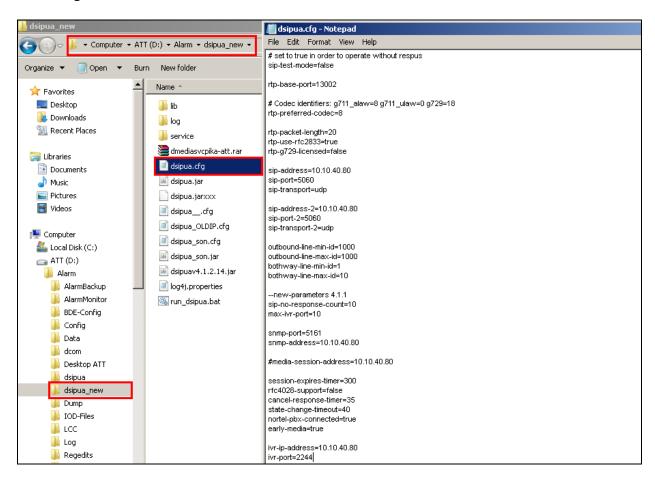


# 7. Configure ATT-AudioText Telecom AG Alarm Management Server

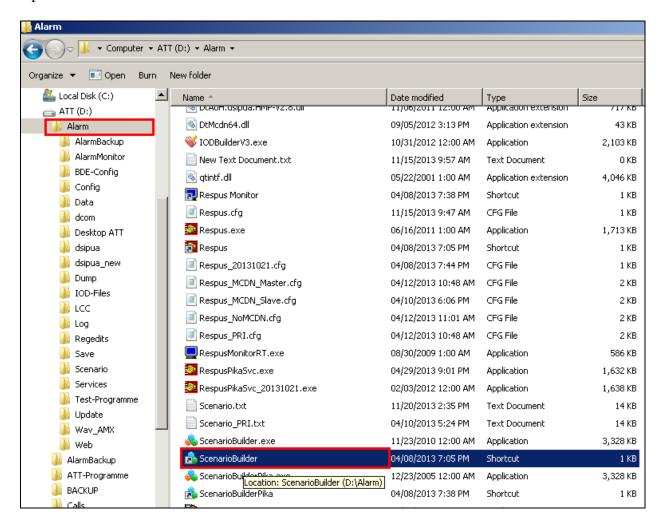
The configuration of the ATT AMX server involves the SIP connection between the AMX Alarm server and Session Manager also the addition of the extension(s) to call on Communication Manager to issue the alarm notification.

## 7.1. Configuring the SIP connection to Session Manager

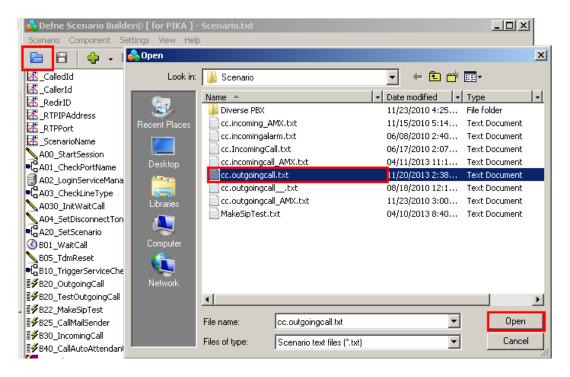
During the initial installation of AMX a folder called Alarm is created. Navigate to **Alarm**  $\rightarrow$  **dsipua\_new**, open file called **dsipua.cfg**. Note the address below **10.10.40.80** is the IP address of the AMX server. The **sip-port** used is **5060** and the **sip-transport** is **udp**. All remaining fields were left as default.



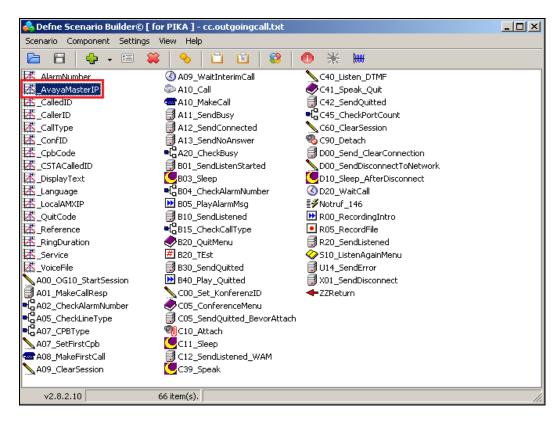
#### Open ScenarioBuilder which is also located in the Alarm folder.



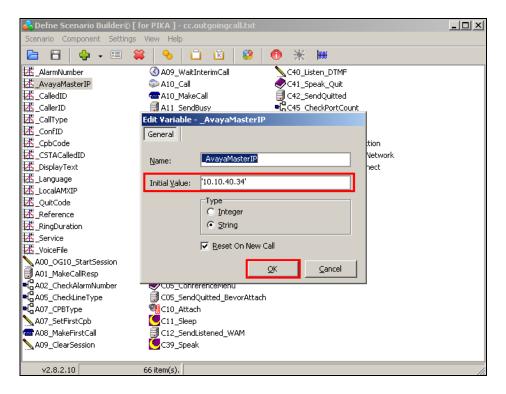
Click on the open icon at the top left of window, this opens the following window where **cc\_outgoingcall.txt** is chosen and opened.



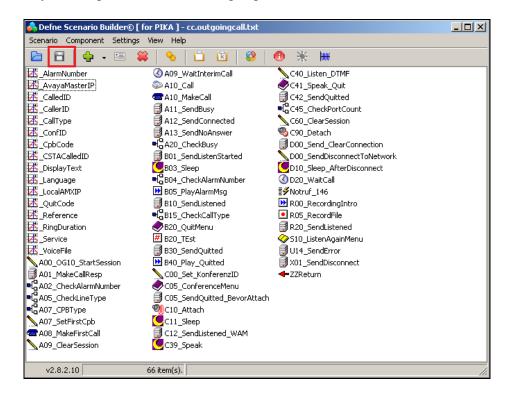
Select **\_AvayaMasterIP** from the resulting window below.



Enter the IP address of the Session Manager into the **Initial Value** field. Everything else can be left as default, click on **OK** to continue.

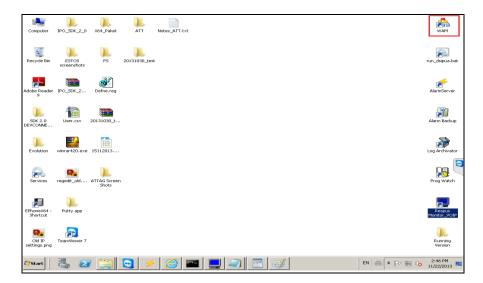


Save this file by clicking on the save icon highlighted

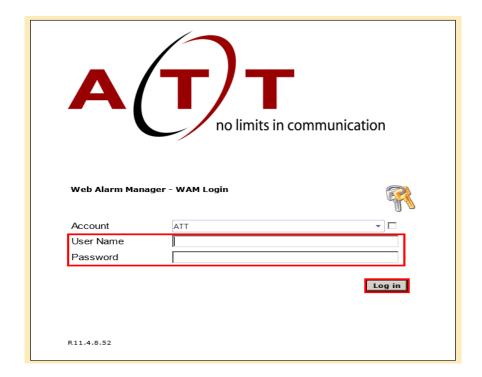


## 7.2. Adding extensions to call

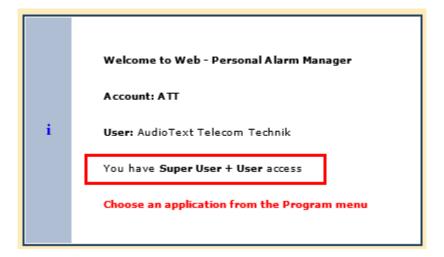
This section describes the steps necessary to create the extension numbers and groups that the Alarm server will call in the event of an alarm. Open the **WAM** shortcut on the Alarm server desktop.



Enter the proper credentials for a "Super User" and click on Log in to continue.

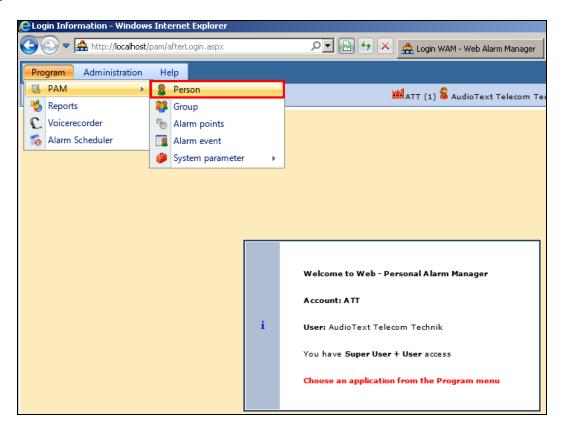


The following screen shows that the user is logged in correctly as a Super User.

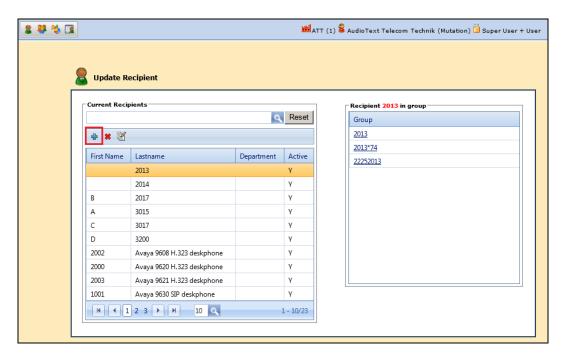


#### 7.2.1. Add a new Person

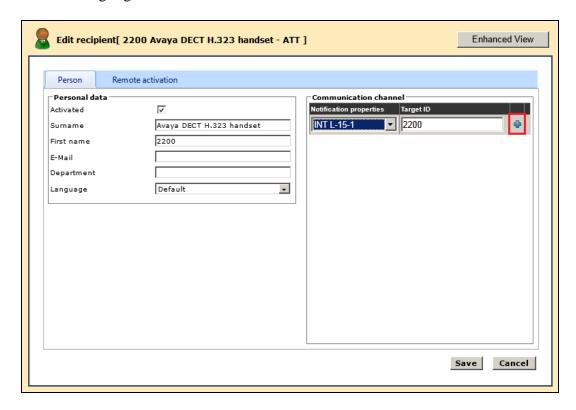
A new extension is represented as a person in the setup. To add a new person, select **Program PAM Person** as shown below.



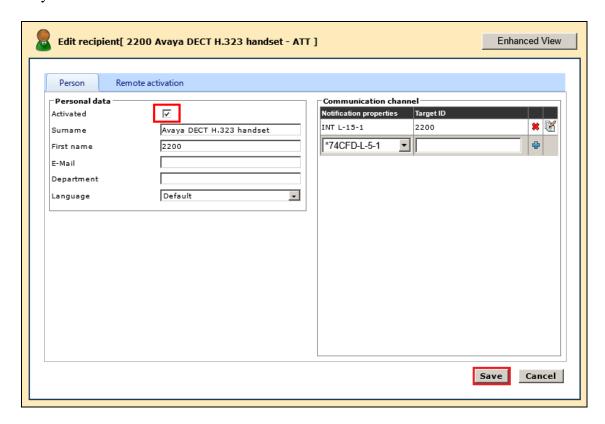
In the resulting window click on the **New** icon highlighted below.



Enter the person or extension details as shown and ensure that **INT L-15-1** is selected as the **Notification properties** and that the extension number is entered as the **Target ID**. Then click on the **Add** icon highlighted below.

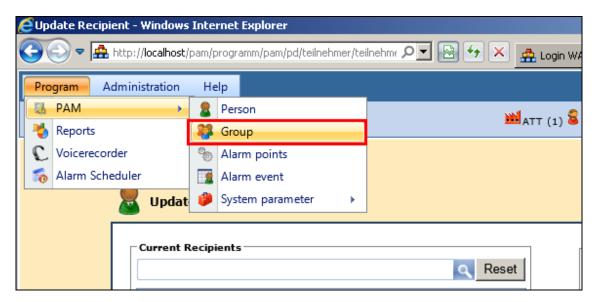


Ensure that the **Activated** box is ticked and click **Save** once the **Target ID** has been added correctly as shown below.

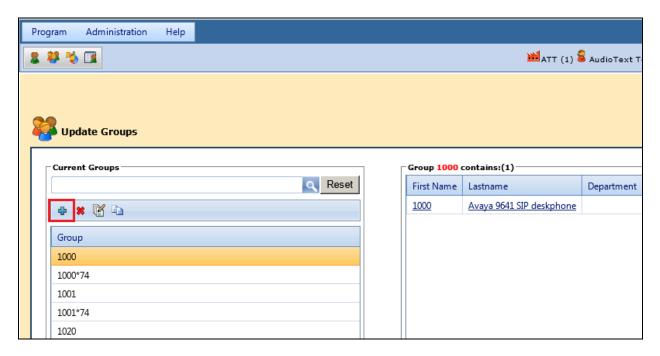


#### 7.2.2. Add a new Group

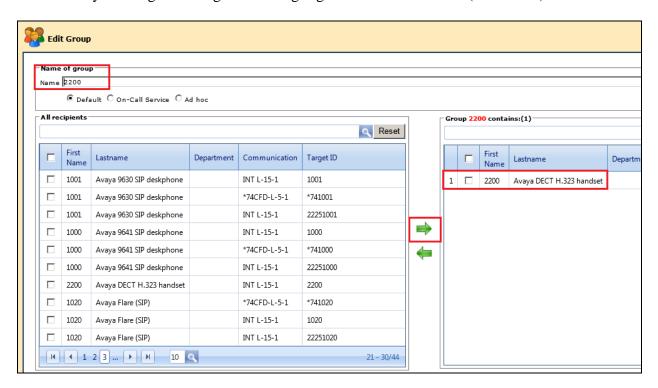
A new group must be added that contains the person or people involved in this group. Select **Program** $\rightarrow$ **PAM** $\rightarrow$ **Group**.



Click on the **New** icon highlighted below.

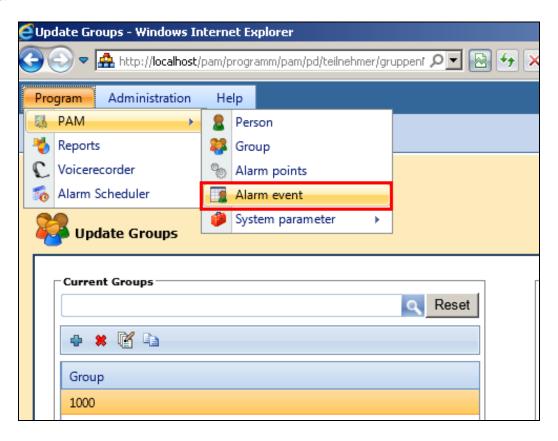


Enter a **Name** for the new group. From the left window locate the new user added previously and select this by clicking on the right arrow highlighted. Then click **Save** (not shown).

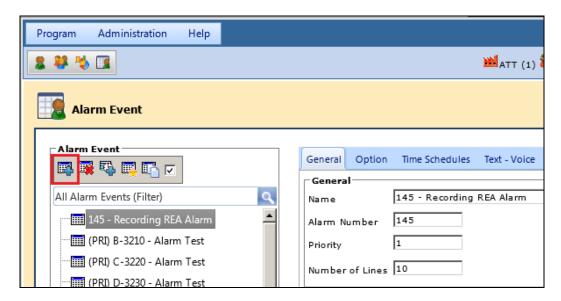


#### 7.2.3. Create an Alarm Event

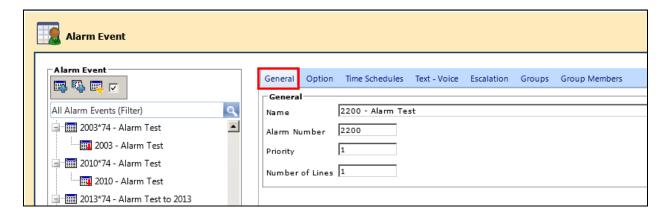
In order to send an alarm, an alarm event must first be created. Select  $\mathbf{Program} \rightarrow \mathbf{PAM} \rightarrow \mathbf{Alarm}$  event.



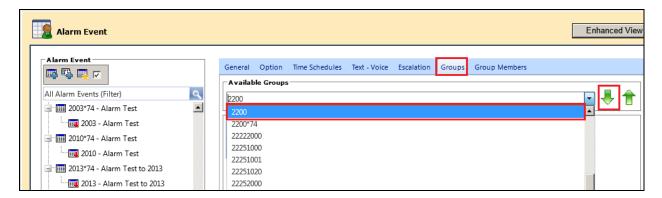
In the resulting window click on the **New** icon highlighted below.



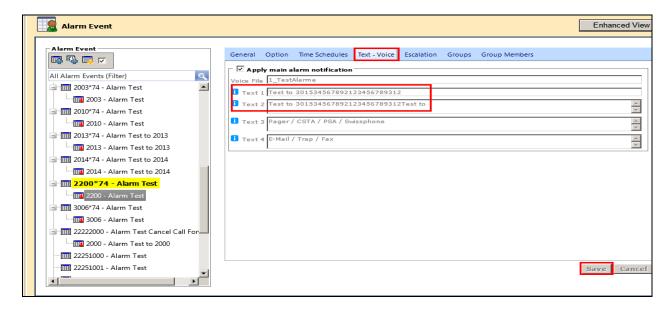
In the General tab enter the details of the new event such as the Name and the Alarm Number.



Click on the **Groups** tab and select the group created in the previous section. Click on the down arrow highlighted to add this to the Alarm Event.



All other tabs can be left as default, such as **Text-Voice** shown below which has a certain text associated with it created during the install. Click on **Save** once complete.

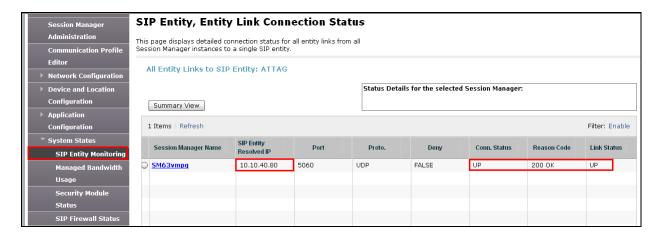


# 8. Verification Steps

The following steps can be taken to ensure that connections between ATT AMX server and Session Manager and Communication Manager are up.

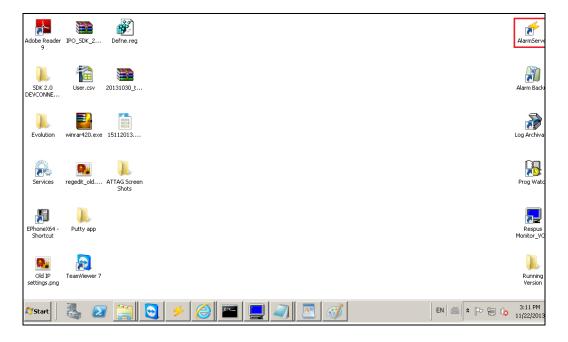
## 8.1. Show SIP entity is up on Session Manager

Log into System Manager as done previously in **Section 6.1**, select **Session Manager** (not shown). Click on **SIP Entity Monitoring** as highlighted below. Note that the SIP Entity, **10.10.40.80** (ATTAG SIP Entity address), shows **UP** and **200 OK**.

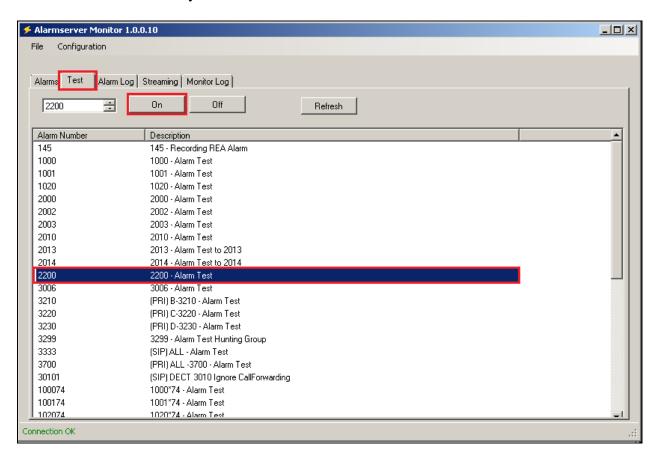


#### 8.2. Show alarm is sent on the AMX Alarm Server

Open the Alarm Server by clicking on the **AlarmServer** icon highlighted on the screen below.



Click on the **Test** tab and select the alarm event created in **Section 6.2.3**. Once selected click on the **On** button highlighted below. The extension associated with the event should ring, allowing the alarm be heard correctly from that extension once answered.



#### 9. Conclusion

These Application Notes describe the configuration steps required for ATT-AudioText Telecom AG Alarm Management Server to successfully interoperate with Avaya Aura® Communication Manager R6.3 and Avaya Aura® Session Manager R6.3 by registering the Alarm with Avaya Aura® Session Manager as third-party SIP user. Please refer to **Section 2.2** for test results and observations.

#### 10. Additional References

This section references documentation relevant to these Application Notes. The Avaya product documentation is available at <a href="http://support.avaya.com">http://support.avaya.com</a> where the following documents can be obtained.

- [1] Administering Avaya Aura® Communication Manager, Document ID 03-300509
- [2] Avaya Aura® Communication Manager Feature Description and Implementation, Document ID 555-245-205
- [3] Implementing Avaya Aura® Session Manager Document ID 03-603473
- [4] Administering Avaya Aura® Session Manager, Doc ID 03-603324

Please refer to **Section 2.3** of these Application Notes for information on ATT support.

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